Science Flight Report
Operation IceBridge Antarctica 2010

Flight: **F05**
Mission: **Getz 02**

Flight Report Summary

Aircraft	**DC-8 (N817NA)**
Flight Number	110110
Flight Request	118003
Date	Friday, November 05, 2010 (Z), Day of Year 309
Purpose of Flight	Operation IceBridge Mission Getz 02
Take off time	13:04:00 Zulu from Punta Arenas (SCCI)
Landing time	23:54:10 Zulu at Punta Arenas (SCCI)
Flight Hours	10.9
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	• Low-altitude survey (1,500 ft AGL) of Getz Ice Shelf and Devicq Glacier. • Completed entire mission as planned. • ATM, MCoRDS, Snow and Ku-band radars, gravimeter, LVIS, POS/AV, and DMS were operated on the survey lines. • Conducted a ramp pass at Punta Arenas airport for ATM, LVIS and DMS instrument calibration (1,200 ft AGL). • Conducted pitch and roll maneuvers for LVIS calibration over Drake Passage and Strait of Magellan.
Geographic Keywords	Antarctica, Getz Ice Shelf, Devicq Glacier, Marie Byrd Land
ICESat/CryoSat Track	None
Repeat Mission	Partial reflight of 2009 Getz 01.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	☑	☒	☒	40 GB	None
MCoRDS	☑	☒	☒	1 TB	None
Snow Radar	☑	☒	☒	175 GB	None
Ku-band Radar	☑	☒	☒	175 GB	None
LVIS	☑	☒	☑	80 GB	None
DMS	☑	☒	☑	36 GB	None
POS/AV (510 + 610)	☑	☑	☑	2 GB	None
Gravimeter	☑	☑	☑	80 MB	None
DC-8 Onboard Data	☑	☑	☑	40 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is intended to supplement the Getz 1 flight from October 16, 2009 with more gravity-oriented lines along the Getz Ice Shelf, and particularly along the "flux gate" on the seaward edge of the shelf. We also repeat the line first flown in 2009 along the centerline of the Devicq Glacier to measure ice surface elevation changes.

Our transit route from Punta Arenas into the survey area crossed the western edge of the Abbott Ice Shelf. We flew over the rift in the Abbott Ice Shelf during the high-altitude inbound and outbound transits to accommodate a request from the British Antarctic Survey to gather topographic data over the rift. The area was completely obscured by clouds during both passes and we did not get usable elevation data on this target of opportunity.

The weather was what we had anticipated from the forecast with scattered clouds near the Bear Peninsula and improving towards the Devicq Glacier.

During descent to waypoint R1001 we stayed 24 nautical miles away from the newly discovered penguin colony on Bear Peninsula while still flying at 14,000 ft.

The frost layer that covered the LVIS window on yesterday's flight had been identified as seeping jet fuel, potentially caused by 5 no-fly days in a row while the aircraft was parked on the ramp with a full load of fuel. The area was cleaned and the window stayed clear during the entire flight.

All systems worked well and we were able to collect LVIS and DMS data over sea ice in the Bellingshausen and Amundsen Seas. All in all, an uneventful flight that collected good data.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM system worked well and collected good data along the entire survey line.

MCoRDS: The MCoRDS radar worked well.

Snow and Ku-band radar: Worked well. About 10% of the line was lost due to necessary altitude changes to accommodate varying terrain in the survey area.

Gravimeter: Worked well. No issues.

DMS: DMS worked well.

LVIS: The LVIS system worked very well. The window was nice and clean. LVIS got good sea ice data on the inbound and outbound transits and collected narrow swath data over the low-altitude survey lines.

POS/AV: Systems worked well. No issues.

DC-8 on board data: System worked well.

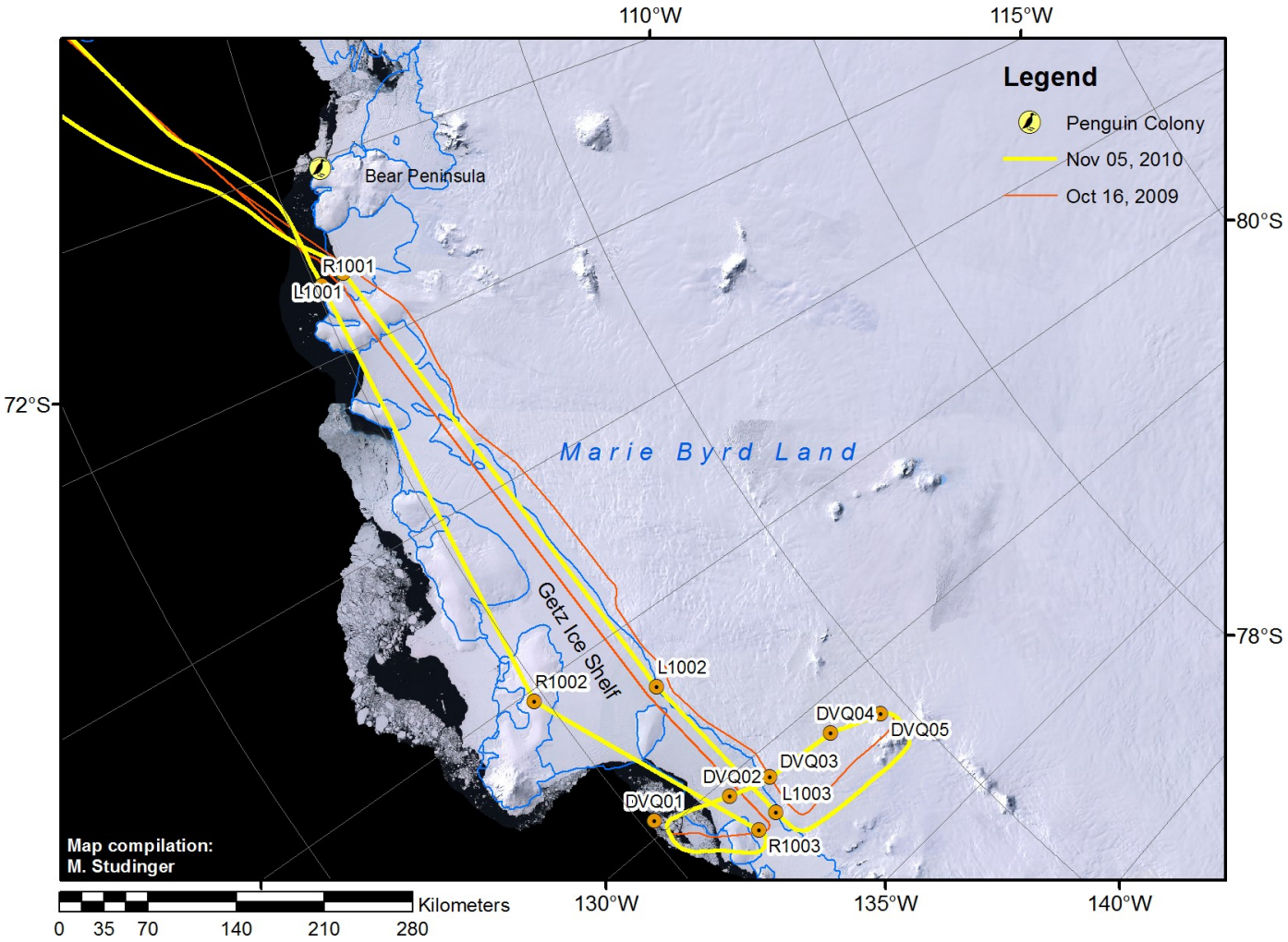

Figure 1: Flight paths of both, today's and last year's Getz missions.